

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) A method of forming a nitride-based semiconductor layer, comprising the steps of:

growing a buffer layer of $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$) on a substrate at a growth rate in the range from 25 Å/sec to 42 Å/sec of at least 16 Å/sec; and

growing a nitride-based semiconductor layer of $\text{Al}_a\text{B}_b\text{In}_c\text{Tl}_d\text{Ga}_{1-a-b-c-d}\text{N}$ ($0 \leq a < 1$, $0 \leq b < 1$, $0 \leq c < 1$, $0 \leq d < 1$, $a+b+c+d < 1$) on said buffer layer, wherein

said step of growing the buffer layer comprises growing said buffer layer to have a film thickness in the range from 50 Å to 300 Å.

Claims 2 - 3 (Canceled)

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Claim 4 (Original) The method of forming a nitride-based semiconductor layer according to claim 1, wherein

said step of growing the buffer layer comprises growing said buffer layer at a growth rate in the range from 25 Å/sec to 29 Å/sec.

Claim 5 (Original) The method of forming a nitride-based semiconductor layer according to claim 1, wherein

said step of growing the buffer layer comprises adjusting the growth rate of said buffer layer by the supply amount of a group III element supplied at the time of growing said buffer layer.

Claim 6 (Canceled)

Claim 7 (Original) The method of forming a nitride-based semiconductor layer according to claim 1, wherein

said step of growing the buffer layer comprises growing said buffer layer to have a film thickness in the range from 100 Å to 200 Å.

Claim 8 (Original) The method of forming a nitride-based semiconductor layer according to claim 1, wherein

said step of growing the buffer layer comprises growing said buffer layer at a substrate

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temperature in the range from 500° C to 700° C.

Claim 9 (Original) The method of forming a nitride-based semiconductor layer according to claim 1, wherein

said step of growing the buffer layer comprises growing said buffer layer at a substrate temperature in the range from 550° C to 650° C.

Claim 10 (Currently Amended) A method of manufacturing a nitride-based semiconductor device, comprising the steps of:

growing a buffer layer of $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$) on a substrate at a growth rate in the range from 25 Å/sec to 42 Å/sec of at least 16 Å/sec; and

growing a nitride-based semiconductor layer including an active device region on said buffer layer and made of $\text{Al}_a\text{B}_b\text{In}_c\text{Tl}_d\text{Ga}_{1-a-b-c-d}\text{N}$ ($0 \leq a < 1$, $0 \leq b < 1$, $0 \leq c < 1$, $0 \leq d < 1$, $a+b+c+d < 1$) on said buffer layer, wherein

said step of growing the buffer layer comprises growing said buffer layer to have a film thickness in the range from 50 Å to 300 Å.

Claims 11 - 12 (Canceled)

Claim 13 (Original) The method of manufacturing a nitride-based semiconductor device according to claim 10, wherein

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said step of growing the buffer layer comprises growing said buffer layer at a growth rate in the range from 25 Å/sec to 29 Å/sec.

Claim 14 (Original) The method of manufacturing a nitride-based semiconductor device according to claim 10, wherein

said step of growing the buffer layer comprises adjusting the growth rate of said buffer layer by adjusting the supply amount of a group III element supplied at the time of growing said buffer layer.

Claim 15 (Canceled)

Claim 16 (Original) The method of manufacturing a nitride-based semiconductor device according to claim 10, wherein

said step of growing the buffer layer comprises growing said buffer layer at a substrate temperature in the range from 500° C. to 700° C.

Claim 17 (Original) The method of manufacturing a nitride-based semiconductor device according to claim 10, wherein

said step of growing the nitride-based semiconductor layer comprises forming as said active device region a light emitting layer or an active layer in a semiconductor light emitting

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device, a core layer in a waveguide device, an I layer in a PIN photodiode, a pn junction portion in a photodiode or a hetero-junction bipolar transistor or a channel portion in a field effect transistor.

Claim 18 (Original) The method of manufacturing a nitride-based semiconductor device according to claim 10, wherein

said step of growing the nitride-based semiconductor layer comprises forming a cladding layer of a first conductivity type, an active layer and a cladding layer of a second conductivity type in this order.